i.TrekTR·1

Personal Tracking System

User Manual

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Introduction

Thank you for purchasing i.Trek TR-1, a real time tracking system based on GPS and GSM technology. Unlike traditional tracker, TR-1 does not rely on call center or Internet to operate. There is no monthly fee to pay and your privacy is completely protected. With i.Trek TR-1, user can track any object globally in real time as long as the tracking object is within cell phone network and has line of sight with sky.

Application Examples

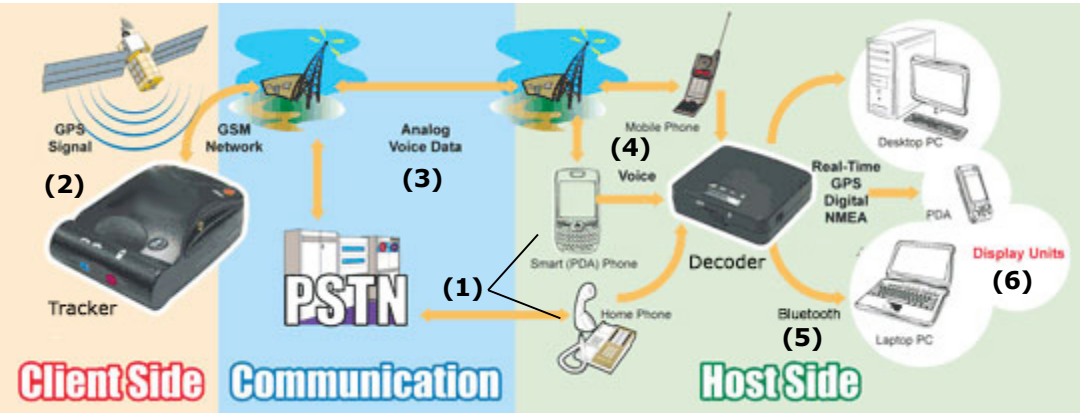
Vehicle Tracking – Locate important vehicles and assist in stolen vehicle recovery.
Personal Tracking – Locate lost children or senior citizens.

Requirements for using i.Trek TR-1:

1. A SIM card with a valid phone number associated for the tracker.
2. Any phone (home phone or mobile phone) for data communication.
3. A PDA, smart phone or laptop with Bluetooth capability and mapping software installed.

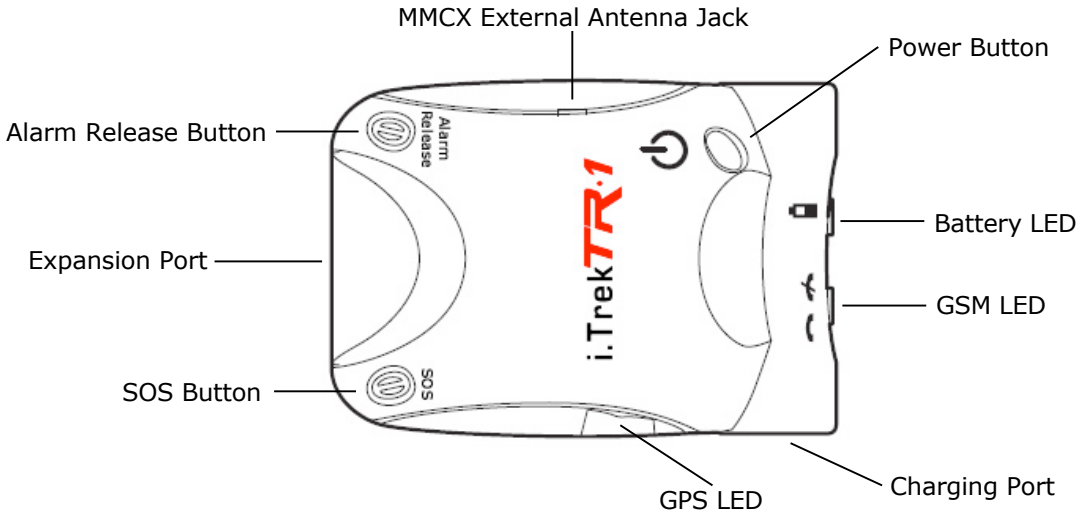
How i.Trek TR-1 works

1. The user calls Tracker from any phone to establish a connection.
2. The Tracker receives signal from the satellite and encodes position data into voice data.
3. The encoded voice data travels through phone network as voice.
4. The phone receives the voice and passes to the decoder.
5. The decoder converts the voice back to position data and sends out via Bluetooth.
6. The display unit receives the position data and shows the tracker location on a map.



Package Contents

Tracker with Li-Ion battery
Decoder with Secure Strap
USB Charging Cable with USB Car Charger
Manual and Tracking Software CD with serial number



Power Button
Press the power button to turn on / off the GPS tracker

Battery LED
Red – Battery low and requires charge
Green – The battery is fully charged
Orange – The battery is charging

GSM LED
Flashing Quickly – GSM stand-by
Flashing Slowly – No SIM card or searching for network
Solid – Network connected

Charging port (mini1394)
Connects to car charger or home charger to charge the battery

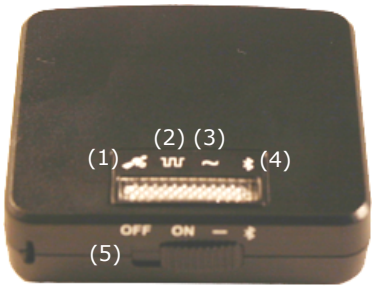
GPS LED
Flashing – The GPS is searching for satellites
Solid – The GPS position has fixed

SOS Button
Press the button to report current position to pre-set phone numbers.

Alarm Release Button (Applicable only with optional car control unit)
Not used in default setting. When connecting to the optional car control unit, press the button to disable the alarm.

External Antenna Jack (MMCX)
Recommended if user plans to mount the GPS tracker inside the trunk or locations without direct view of the sky.

Bluetooth Decoder



(1) GPS LED
Flashing orange – The GPS is searching for satellites
Solid orange – The GPS position has fixed

(2) Decoder LED
Flashing red (4 sec. interval) – The decoder is decoding input data

(3) Input LED
Solid green – The decoder is receiving input data from phone

(4) Bluetooth LED
Flashing blue – Bluetooth not connected
Solid blue – Bluetooth connected

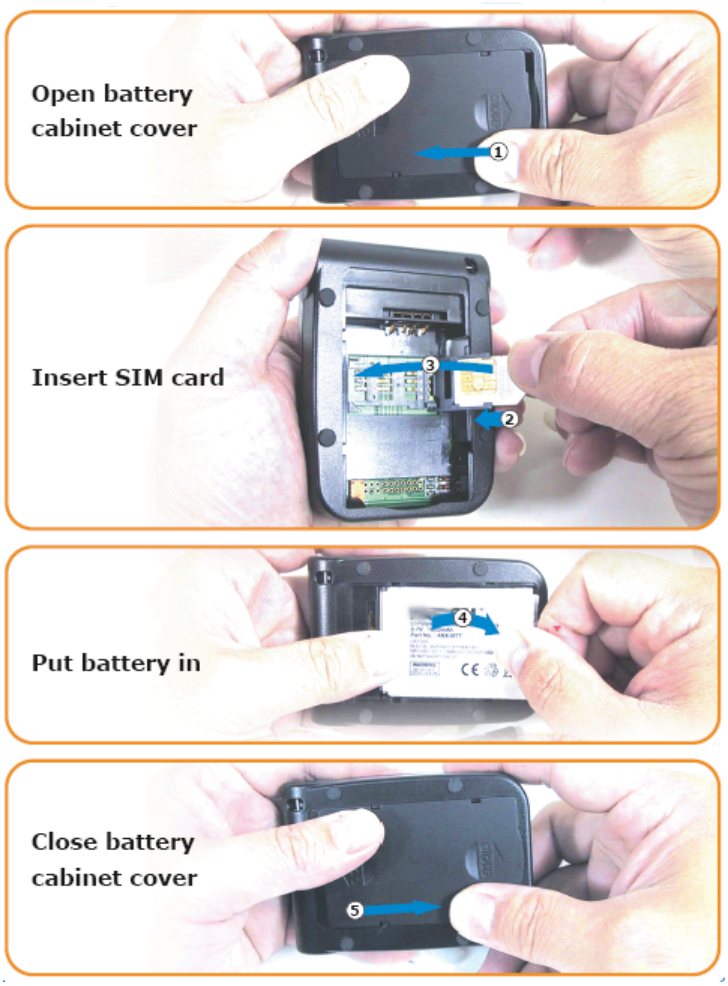
(5) Power / Output Switch OFF
Left – Decoder is off
Middle – Decoder is on and the data is sent via wired connection (optional cable required)
Right – The coder is on and the data is sent via Bluetooth connection

(6) Built-in Microphone
Built-in microphone to receive the voice input data from the phone

Setting up GPS / GSM Tracker

1. SIM Card Installation

SIM card slot is located inside the battery cabinet. Please open the battery cover underneath the tracker to locate SIM card slot. If the battery is already installed, please remove the battery to reveal the SIM card slot. Follow the figures below to install the SIM card.



2. Charging Battery

It is recommended to charge the battery for overnight when you use the tracker for the very first time. When the power is full, the battery LED will turn green. With subsequent use, the battery will take about 3 – 4 hours to fully charge.

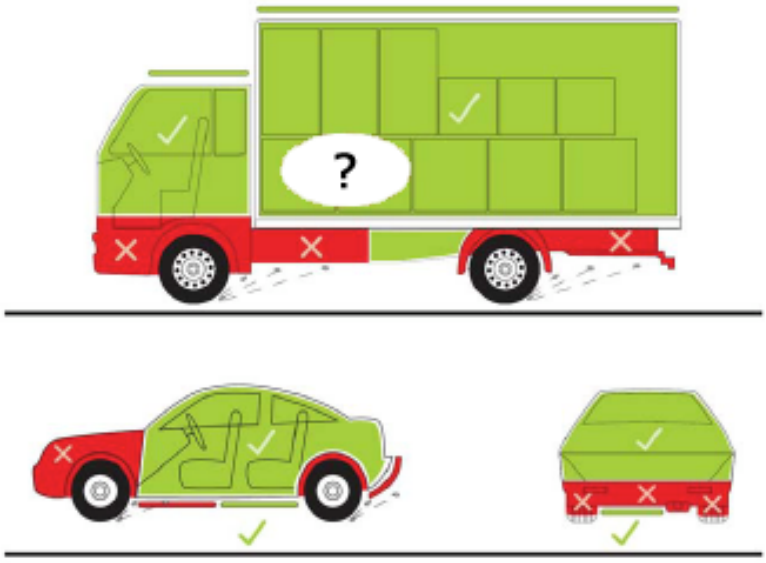
Setting up GPS / GSM Tracker (Cont.)

3. Switch On

Press the power button to switch on TR-1 tracker. Please make sure the GPS LED is flashing indicating it is getting a fix from the satellites. This may take 1 –2 minutes when you use the tracker for the first time. Also, the GSM LED also needs to be flashing indicating SIM card is inserted and GSM network is stand by.

4. Installation

The high sensitivity of TR-1 tracker enables it to operate in challenging environments. TR-1 tracker will work inside a vehicle, in glove box, under seats, or even inside the trunk. However, it is always recommended to install TR-1 in places with best view of the sky whenever possible.



Green – Recommended
Red – Not recommended
? – Experimentation required

Tracking with Bluetooth Decoder

1. Establish connection between Tracker and Bluetooth Decoder

From a telephone or mobile phone, dial the phone number of the SIM card inside the tracker. Connect your phone to the decoder by placing the decoder microphone on the phone speaker. The Bluetooth decoder will then convert the analog voice data back to real-time GPS digital NEMA messages. Please set power switch to the right position (Bluetooth) to use Blueooth connection.

2. Checking Decoder status

Solid orange LED ( ) followed by blinking red LED ( ) means that the data is valid and you have a real time position data. If the orange LED is blinking, then it means the tracker is not able to get enough satellite to provide real time position. The report position will be at location where the tracker has the last fix. Solid green LED ( ) means the voice from the phone is valid. If the green LED is not available, please check the cables and make sure they are connected. Also, please turn up the volume if you are using the included microphone cable.

3. Pairing Bluetooth Decoder to PDA, SmartPhone, or laptop

Bluetooth decoder can be connected to a Bluetooth enabled PDA, SmarPhone or laptop through serial port profile (SPP). Please refer to the Bluetooth setup section (appendix) for detail setup instruction for different devices. Solid blue LED ( ) means you have a Bluetooth connection with the host device. With optional PDA or USB cable, it is also possible to connect Bluetooth decoder to a PDA or Computer via direct wire connection.

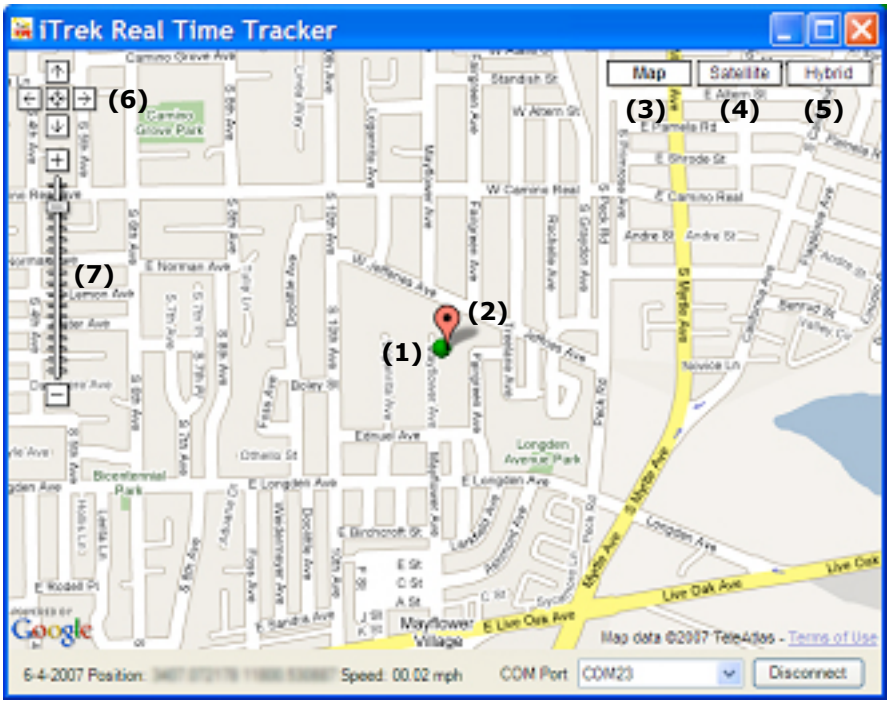
4. Locate Tracker with any NMEA compatible mapping software

Using any NMEA compliant software such as Microsoft Street and Trips, iGuidance, or TomTom Navigator, you can select the com port assigned by the Bluetooth manager as outgoing comport and the tracker location will be displayed on the screen.

5. Installaing i.Trek Real Time Tracker software

i.Trek real time tracker software for Windows (2000, XP, Vista) is included on CD. Since the tracker software is based on Google Map technology, it has the same coverage as Google Map. From Windows Explorer, locate setup.exe on CD and double click on the **setup.exe** to install the program to your computer. You will need a **Gmail account** and **software serial number** (on CD) to complete the setup. After you install the software successfully, the program icon will be available in the program file menu. Just click on the icon to launch the program.

6. Using i.Trek Real Time Tracking software



(1) Current Location – Display current location of the tracker
(2) Starting Location – Display starting location of the tracker
(3) Map View – Display streets and street names
(4) Satellite View – Display satellite image
(5) Hybrid View – Display streets and street names on top of satellite image
(6) Moving Arrow – Scroll the map in the direction of the arrow
(7) Zoom – Move the slider up or down to zoom in or zoom out
(8) Date – Display the current date
(9) Position – Display longitude and latitude of the tracker
(10) Speed – Display the speed of the tracker
(11) Com Port – Select the com port which communicates with the Bluetooth decoder
(12) Connection – Connect or disconnect Bluetooth decoder from the program

Tracking without Bluetooth Decoder

It is also possible to locate the tracker without Bluetooth decoder. In this case, the data will be sent to your mobile phone as short text message.

From a mobile phone, dial the phone number of the SIM card inside TR-1 tracker to establish a connection. Press "71" and hang up the phone. In few seconds, the phone will receive a short text message with coordinate information. You can visualize the position by entering the coordinates into mapping software such as Google Earth.

Short Text Message Example

*SOS*V, N, 23" 51' 15.6, E, 120" 38' 09.6, 202.3, 359.9*
1 2 3 4 5 6

(1) Message Type

SMS = Short message dial back

SOS = SOS button dial back

ALARM = Anti-thief trigger dial back (only available with optional car control unit)

SENSOR = Moving sensor trigger dial back (only available with optional motion sensor)

(2) Position Information

V = GPS last location (Tracker has no fix and reports last fix position)

A = GPS current location (Tracker has fix and reports current location)

(3) Longitude

Longitude = North 23" 51' 15.6

(4) Latitude

Latitude = East 120" 38' 09.6

(5) Speed

Speed = 020.3 (Sea Mile)

(6) Direction

Direction = 359.9 (degrees)

FAQs and Troubleshooting

Is there a monthly fee for using i.Trek TR-1 Personal Tracking System?
There is no additional fee for using I.Trek TR-1 Tracking System besides your regular phone call charge.

The position update on the map is jumpy
In order to display the position on the map, the tracker receives the information from the satellite and sends the data through GSM network to the decoder. The decoder then sends the data to your computer to be display on the map. Since there are several communication layers and two modules, some delay is expected. The position update will very depending on satellite location, network signal, and Bluetooth strength.

Does Bluetooth Decoder require driver?
No, Bluetooth Decoder does not require driver to run. As long as the host device supports Bluetooth and serial profile, it will recognize BT Decoder through discovery mode.

The Bluetooth Decoder is successfully paired through Bluetooth Manager. However, the GPS mapping software can not recognize the Bluetooth Decoder.
Please make sure you have assigned an outgoing com port on the Bluetooth manager and select the same com port in the mapping software.

Will i.Trek TR-1 Personal Tracking System work in my country?
i.Trek TR-1 supports EGSM 900, GSM 1800, and GSM 1900. Please check with your mobile phone provider and your GSM network is using one or more of these frequencies. For US region, both AT&T (Cingular) and T-Mobile supports GSM network.

The tracker can not get a fix even outdoors?
If you have not used the tracker for long time, the satellite information stored in the built-in memory may be outdated. Please remove the battery for 25 ~ 30 minutes to reset the tracker.

Warranty and Support Information

The warranty information provided in this documentation applies to i.Trek TR-1 Personal Tracking System sold to end-users by i.Trek authorized reseller:

If you have any difficulty using this product, please first consult the user manual to check that you are using the product correctly, and then consult your reseller for guidance on correcting the problem that you are experiencing. Any warranty claim must be made via i.Trek authorized reseller who supplied the product.

The warranty period is one year from the date of purchase.

Support Phone number: (626) 574-0279
Support Email: support@itrekgps.com

Appendix 1: Technical Specifications

Antenna

Receiver Frequency:	1575.42 MHz (L1 band) C/A code
Antenna Type:	Built-in Active Antenna with MMCX external antenna jack

GPS Receiver

Technology:	SiRF Star III
Satellite Measure Used:	20-channel parallel automatic selection
Tracking Sensitivity:	-159 dBm
Operating Temperature:	-10°C to 55°C
Battery:	1600 mAh user removable Li-Ion rechargeable battery
Operating Time:	15+ hours

GSM Module

Frequency:	EGSM 900, GSM 1800, GSM 1900
Transmit Power:	Class 4 (2W) at EGSM900; Class 1 (1W) at GSM1800/1900

Bluetooth Decoder

Standard:	Fully compliant with Bluetooth V1.2
Output Power:	0dBm (Typical), Class II
Range:	Up to 10 meters
Bluetooth Profile:	Serial Port Profile (SPP)
Frequency:	2.4GHz~2.4835GHz ISM Band

Time to First Fix (TTFF)

Reacquisition:	0.1 seconds typical
Hot Start:	8 seconds typical
Warm Start:	38 seconds typical
Cold Start:	48 seconds typical

Accuracy of Position Fix

Horizontal:	3.0m 2D-RMS; <3m CEP(50%) without SA(horizontal); DGPS (WAAS, EGNOS, MSAS, RTCM): 2.5m
Velocity:	0.1/sec 95% without SA

Receiver Configuration

Baud Rate:	4800 bps
Update rate:	Once every seconds
Output Message:	NMEA 0183 v3.01(Default: GGA, GSA, GSV, RMC

Physical Characteristics

Tracker Dimension:	84 x 60 x 29.5 mm
Decoder Dimension:	47.5 x 52 x 14 mm

Appendix 2: Setup SOS Dial Back Number

TR-1 Tracker can report current position via SMS to pre-set phone numbers by press the SOS button.

Setup the SOS dial back numbers:

1. Dial to TR-1 tracker and establish a connection.
2. Press ***** and press default pass code **0000**. The user will hear a long dial tone **du** to verify the setup mode.
3. Press **4** and enter the first SOS dial back number. Press ***** to confirm.
4. Press **5** and enter the second SOS dial back number. Press ***** to confirm.
5. Press **6** and enter the third SOS dial back number. Press ***** to confirm.

SOS number Example:

Press **4 800 123 4567*** to setup the first SOS dial back number as **800 123 4567**.
Press **4*** to cancel the first SOS dial back number.

Change the device pass code:

1. Dial to TR-1 tracker and establish a connection.
2. Press ***** and press default pass code **0000**. The user will hear a long dial tone **du** to verify the setup mode. If the code is enter incorrectly, it will respond with 4 short dial tone **du du du du**.
3. To change the pass code: Press **0** and press the new pass code twice. Press ***** to confirm the new pass code.

Pass code Example:

Press **0 1234 1234*** to setup **1234** as the pass code.

Appendix 3: Pairing Bluetooth Decoder to a Computer

The instruction is provided as a general guideline. The steps may be different on your particular device. Please refer to user manual of each device for more detailed information.

Windows with XP Bluetooth Manager

1. Open **Control Panel**.
2. Double click on **Bluetooth Devices**.
3. On the **Devices** tab, click on **Add...** button.
4. The **Welcome to the Add Bluetooth Devise Wizard** will show on screen.
5. Put a check on **My device is setup and ready to be found**, and go **Next**.
6. From the list of Bluetooth devices found, select GPS and go **Next**.
7. Select **Use the passkey found in the documentation**
8. Enter **0000**, then go **Next**.
9. Click **Finish** to complete the setup and take a note of the Outgoing Com port.

Windows with Widcomm/Broadcom Bluetooth Manager

1. From Desktop, click on **My Bluetooth Places** icon to open Bluetooth Manager.
2. Click on **Search for devices in range** to search all available Bluetooth devices.
3. Enter **0000** as passkey and **BT GPS** icon should be displayed.
4. Right click and select Connect **SPP Slave**.
5. The Bluetooth connection will be established and BT GPS icon will become green.

MAC OS X 10.3 or older

1. Go to System Preferences and click on the Bluetooth icon.
2. Click on **settings** to ensure BT is turned on and **discoverable**.
3. Select the **Devices** tab.
4. Click on **set up new device** and this brings up the Bluetooth Set Up Assistant.
5. Follow the instructions on the set up assistant and enter **0000** as passkey.
6. The device should be listed in the **devices** window.
7. Locate the BT serial utility application in the **utilities** folder, double click to open.
8. Click on **new**.
9. Assign the port a name, select **outgoing**, click on **select device**.
10. Select the Bluetooth GPS and highlight **SPP slave** in the right hand window.
11. Click **select** button and select the port type **RS-232**.
12. Click **OK** to finish setup.

MAC OS X 10.4

1. Go to System Preferences and click on the Bluetooth icon.
2. Click on **settings** to ensure BT is turned on and **discoverable**.
3. Select the **Devices** tab.
4. Click on **set up new device**.
5. The Introduction page is displayed and click **Continue**.
6. Select **Any Device** and click **Continue**.
7. Select BT GPS and click **Passkey Options** .
8. Bluetooth Device Setup is displayed and click **Continue**.
9. Enter **0000** as passkey and click **Continue**.
10. To finalize setup, click **Quit**.

Appendix 4: Pairing Bluetooth Decoder to a PDA

The instruction is provided as a general guideline. The steps may be different on your particular device. Please refer to user manual of each device for more detailed information.

Pocket PC WM2003/WM2003SE

* Make sure Bluetooth is enabled on the Pocket PC.

1. Open Bluetooth Manager by clicking on **Bluetooth Manager** icon.
2. Select **New** -> **Connect!** to start Connection Wizard.
3. Highlight **Explore a Bluetooth device** and click **Next**.
4. Select **Tap here to choose a device** and click **Next**.
5. Bluetooth wizard will search and display available Bluetooth devices on screen.
6. Click on **BT GPS** icon and available service will display.
7. Enter **0000** as passkey.
8. Select **SPP Slave** and click **Next**.
9. Select **Finish** and BT GPS is now available as short cut.

Pocket PC WM5/WM6

1. Open Bluetooth Manager by clicking on **Bluetooth Manager** icon.
2. In **Mode** tab, Please check **Turn On Bluetooth**.
3. In **Devices** tab, click on **New Partnership** to begin pairing of devices.
4. Click on the device found (BT GPS) and click **Next**.
5. Enter **0000** as passkey and click **Next**.
6. Check the **Serial Port** box and click **Finish**.
7. In **COM Ports** tab, click on **New Outgoing Port**.
8. Do not check **Secure** connection.
9. Tap **Next** when the new found device appeared and highlighted.
10. Select com port that is allowed by your PDA (ie COM7) and Click **Finish**.

Palm OS

1. Click on **Bluetooth** icon to start Bluetooth Manager.
2. Make sure Bluetooth is selected to **On**.
3. Click on **Setup Devices** and then click on **Trusted Devices**.
4. Click on **Add Devices** to search for available devices.
5. Click on **Bluetooth GPS** and enter **0000** as passkey.

Appendix 5: Pairing Bluetooth Decoder to a SmartPhone

The instruction is provided as a general guideline. The steps may be different on your particular device. Please refer to user manual of each device for more detailed information.

Windows Mobile 2003 SmartPhone

Configure Bluetooth Serial COM Port

- Turn on Bluetooth GPS.
- Press **Start**.
- Press **Setting**.
- Press **Configurations**.
- Press **BTSerialPortSetup**.
- Check **Outbound COM Port** checkbox.

Pairing Bluetooth GPS Receiver

- Press **Bluetooth** and press **Bluetooth** again on next screen.
- Select **On** to enable Bluetooth.
- Press **Menu** > **Devices**.
- Press **Menu** > **New**.
- Press **Select** when BT GPS appears on the list.
- Enter **0000** as the passkey and press Done.

Symbian Series 60 SmartPhone

Turn Bluetooth On

- Press **Connect**.
- Press **Bluetooth**.
- Activate Bluetooth in offline mode? Press **Yes**.

Pairing Bluetooth GPS Receiver

- Press > to enter **Paired devices** screen and then press **Options**.
- Select **New Paired Device**.
- Select **More Devices**.
- When Bluetooth GPS appears in the list, press **Select**.
- Enter **0000** as passkey.
- Authorize device to make connection automatically? Press **Yes**.